

Abstract

The object of the present invention is to provide a garbage collection (GC) system that suppresses wasteful increase in CPU time required for GC, without stopping all AP threads for an excessively long amount of time. The garbage collection system frees memory areas corresponding to objects that are no longer required in an execution procedure of an object-oriented program composed of a plurality of threads, and includes: a selection unit operable to select the threads one at a time; an examination unit operable to execute examination processing with respect to the selected thread, the examination processing including procedures of stopping execution of the thread, finding an object that is accessible from the thread by referring to an object pointer, managing the found object as a non-freeing target, and resuming execution of the thread; a detection unit operable to, when having detected, after the selection unit has commenced selecting, that an object pointer has been processed as a processing target by a currently-executed thread, manage an object indicated by the processing target object pointer, as a non-freeing target; and a freeing unit operable to, after the examination processing has been completed with respect to all of the threads, free memory areas that correspond to objects other than the objects that are managed as non-freeing targets.